

DRAFT MINUTES
August 19, 2010
Lower Feather River Corridor Management Plan
Work Group Meeting

AECOM Coastal Conference Room; 866-203-6896 - Conference Line

Work Group Member Attendance

Name	Affiliation	Telephone #
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Andy Atkinson	DFG – Northern Central Region	530846-5064
Paul Brunner	Three Rivers Levee Improvement Authority	530-749-5679
Debra Bishop	AECOM	916-414-5818
John Carlon	River Partners	530-894-5401 x224
Stacy Cepello	FESSRO Department of Water Resources	916-698-5287
James Cornelius	Sutter Co. Resource Conservation District	530-674-1461
Ken Cumming	NOAA National Marine Fisheries Service	916-930-3656
Steve Fordice	River District 784	530-742-0520
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Jennifer Hobbs	U.S. Fish and Wildlife Service	916-414-6541
Gary Hobgood	Department of Fish & Game	916-983-6920
John Langston	FPEIP Department of Water Resources	916-574-2880
Ryan Larson	U.S. Army Corps of Engineers	916-557-7568
Len Marino	Central Valley Flood Protection Board Staff	916-574-0608
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Charles Rabamad	Department of Water Resources	916-574-2982
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Gary Sprague	Nat. Oceanic & Atmospheric Admin.	916-930-3615
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Jeffrey E. Twitchell	Levee District 1 & Yuba City Basin	916-631-4555
Matt Wacker	AECOM	916-266-4907
Dan Whisman	DWR - LRFMO	916-574-1403
Tim Williamson	D Fish & Game – North Central Region	530-538-2236
David Wright	DFM – Department of Water Resources	916-574-2644

Minutes

Introductions

- Member Introductions made around the table.

Timeline and Task Order

Phase I & II & III

- CMP Plan timeline presentation discussed.
- Len Marino – Discussion on what constitutes a CVFPB (Central Valley Flood Protection Board) approval or adoption of the CMP.
- Paul Brunner – Does an approval also mean approved encroachment permits, MOU's and programmatic agreements? The answer was depends.
- John Carlon – We need to define what a permit entails and what are the parameters for what can be approved by the Board (CVFPB).
- Gary Hobgood – Permits are an ambitious effort on a wide scale. There are too many variables to be determined for a site specific project. The timeline to getting permits approved is another consideration. How to streamline the permit process might be our best bet to get approved by the Board. Such as an effort to say if the permit is within certain parameters then the Board will approve if the situation is a., b., c. A concise definition of the project within set parameters is like what a HCP/NCCP route would entail. We need to discuss the general versus the specific within the long term aspect.
- Paul Brunner – We need a useable goal that defines the permitting process.
- Ken Cumming – Where are we going with this permitting discussion and will we be able to streamline the process to allow for on the ground projects.
- Jeff Twitchell – I feel our Vision for the use of new permits should remain in the realistic realm. Those with experience like River Partners know what kind of improvement projects will help. Some Guidelines need to be developed so we know the cumulative permitting required, timeframes, and the potential to streamline the process with programmatic permitting. We need to flesh out the expectation so there is a realistic approach to the required permits and the desired streamlining.
- John Carlon – No existing projects and permits should be stalled while we move forward with this plan. The Feather River CMP will move forward separate from existing permitting so we can decide future direction for the longer term.
- Earl Nelson – Are there any concerns with that approach?

- Paul Brunner – Both existing and future Elderberry mitigation sites need to be addressed. The CVFP Board has a “20 Questions” process that needs to be addressed. And we will have to address the maintenance needs to be completed into the future? Can Keith Swanson do the anticipated future maintenance work? We of course need some Permits now to complete ongoing projects. The applications are being done now for several projects and will have to move forward with the current process. We don’t want to tell them to wait.
- Earl Nelson – Led an Elderberry mitigation site discussion that went on for several minutes. Regulatory agencies have held permit in the past until all the analysis is completed. The Anderson Elderberry mitigation site has had a Biological Opinion issued. The 408 permit has been issued. The Federal issue in the area appears to be the maintenance and the protection of the area from fire. The CMP should address the extra maintenance needs for mitigation sites.
- Paul Brunner - Perhaps a future vision for the corridor will include a “Planning Zoning concept.” This would include future potential mitigation sites, areas of concern based on modeling, and the corridor flood way flow pattern.
- Terri Gaines – Several projects are being proposed right now. The FESSRO project will be looking at what is being planned in the LFRCMP and using that as a pilot for the larger area.
- Helen Swagerty - The Work Group is addressing a much larger area of concern than represented here in this room. We should involve a bigger group of stakeholders. More discussion followed.
- Earl Nelson – Discussed the AECOM deliverables from the Task Order (Phase 1).
 - Phase 1- identify what we need to know/collect some of it: Phase 2- follow up on the collection; Phase 3- how can the recommended actions be implemented?
 - How do agreements / MOUs combine to meet the objectives of Phase I. Data collection, technical memorandum discussing the biological resources, maps, as needed stakeholder supporting materials, need for plan to develop permitting, etc.
 - *Desire update on the phases
 - Modeling needs to be done sooner rather than later.
 - This is the work plan for phases 2 and 3.
 - Phase 2 is taking the info from phase 1 and making into a plan.
 - Phase 3- will focus into getting all the MOUs and permits in place for all potential actions on the Lower Feather River Corridor.
 - As discussed last time: We want to move forward immediately with ongoing individual projects within the study area. Finish the projects and integrate it into the flood management plan.

Goals and Objectives Review

Goal 3-

- Reword Goal #3 to be similar to the FLOODSAFE goals. Action Item #28
 - **Goal** (modified 9/2/10)
 - 3) Promote ecosystem functions by incorporating flood management system improvements that integrate the recovery and restoration of key physical processes, self-sustaining ecological functions, native habitats, and species.

Objectives

- a) Establish ecosystem restoration projects in conjunction with flood facility maintenance activities and system improvements such that adverse effects to public safety are fully avoided and minimized, and habitat conditions for listed species are improved and contribute toward species recovery. Increasing habitat quality substantially above previous baseline conditions is expected to result in ecosystem functionality which will allow flood facility maintenance to occur with minimal adverse effects to habitat.
 - b) Develop flood facility maintenance Best Management Practices (BMPs) that fulfill flood system operation and maintenance obligations in a manner that preserves public safety while preserving ecosystem vitality and diversity.
- Objective a- Public Safety should be listed higher on the list. This objective only includes ecosystems and habitats so public safety is not included. So, there should be another goal to included public safety. Instead, objective a) included the ideas of public safety. Public safety needs to be included in the vision statement, even if it may be implied, it needs to be stated. *Earl Nelson included public safety in the purpose statement.*
 - Paul Brunner- There needs to be some integrator of public safety into the goals. Would public safety or environmental conservation issues have precedent? It is not clear whether the restoration area or public safety has superiority in a conflict area. Public safety must be the top priority. The hope of creating this CMP is so that there never is a conflict between safety and restoration choices.
 - Earl Nelson- What is our standard for public safety? Do we need to figure out how to define that public safety is important for the entire system? People who live around the levees want to see as much safety as they can get. This could be discussed in a future meeting. Action Item #30
 - Paul Brunner- Made a motion to change the purpose statement to include public safety.

Work Group Subcommittee Reports

O&M Funding Subcommittee Action Item #25

- Paul Brunner – Discussed his meeting with Keith Swanson on the O&M issue. It was clear the Department of Fish and Game is a land manager within the Feather River Corridor. DFG is not a maintenance agency and leaves that chore to DWR. Compliance role is important is what is needed. KS said the plan needs to develop before we know that is needed. Two actions needed. Nancy Finch is TRLIA lawyer's two papers present to the full group. Mitigation on the flood way issues mitigation flood maintenance cost shared by local and state. Cost is covered by TRLIA and get off site mitigation is long term cost. Mitigation is bought at a cost to the proponent.
- The second issue is the use of Bond money to pay for some maintenance work. You can build projects but who covers the maintenance costs. The Bond money can make it a long term success instead of a short term victory. The political decisions made by Bond writers are needed to make the long term maintenance solutions included in the Bonds.
- John Carlon – Different political folks are dealing with the maintenance issues. There are different purposes but the same action to achieve our goals and objectives. Mostly DWR is getting the responsibility defined for the maintenance issues.
- Earl Nelson – Bond dollars for endowments may have the appropriate wording. Propositions that have right wording can deal with maintenance cost. \$18 million of the total budget is for the Flood Maintenance Office. The amount of maintenance money could be increase significantly if the proposition would describe it as a percentage of the total Bond (i.e. 10%).
- Paul Brunner – The more levee mileage and the cost continues to go up with more added coverage miles. Interesting to see a bar graph of what is the cost total cost of maintenance compared to the cost of new levee work. Of course, future inflation and the improved design considerations will have to be included. The magnitude of work continues to grow.

Hydraulic Modeling Subcommittee Action Items #21 & 9

- Jeff Twitchell – The Phase II Task Order needs to address the hydraulic model. Using the existing MBK 2D model is available. Discussion followed on the subcommittee meeting. The MBK model has almost of the needed items discussed at the Subcommittee meeting.
1. Feather River scope. Coverage area southern end lack of information. MBK issue could resolve this concern.
 2. Tune up of the model is definitely needed, but this would cost less than a new effort.
 3. List of needs identified by the subcommittee:

- a) High velocity areas identified
 - b) Identify the high maintenance areas
 - c) Low flow frequently flooded areas versus only the high flow areas
 - d) Project hydraulic model cumulative assessments areas
4. There is a need is by multiple agencies and groups in the public domain. This information should be public accessible.
 5. Data tune up needs should be addressed by the subcommittee group and keeping a holistic view point.
 - Terri Gaines – Wanted Dan Welton- CVFPP chief of the modeling & the AECOM effort involved.
 6. The Flood plain corridor modeling are compatible with other efforts
 - Len Marino – The modeling is the same software as MA2. We need to get this modeling going with the Board approval. There are some cost sharing opportunities here and a Task Order is going into an existing contract. With the CVFPP share of the cost this could help significantly. We will share the Task Order with Work Group!
 - Terri Gaines – Please add a FESSRO person on to the subcommittee Ray McDowell added to list.
 - Gary Hobgood – Meegan Nagy is the contact with the USACE (Corps).
 - John Carlon – We are having consistent delay with the other areas when the data is available. We don't want to get bogged down with the availability of this information.
 - Paul Brunner – MBK is involved with several contracts that are ongoing.
 - Ken Cumming – How much of the area is covered by the different studies?
 - Jeff Twitchell – Discussed the coverage areas by the different hydraulic studies.

Safe Harbor-like Subcommittee Action Item #29

- Jeff Twitchell – Immediate needs and long term. The Bear River is covered as part of the setback in the area
- Earl Nelson – The Objective is to get future projects covered with potential new mitigation areas or use of the current mitigations sites by better design or improvements.
- Jeff Twitchell – LD1 has a proposal to get the Star Bend area as a mitigation site.
- Earl Nelson – The current mitigation site should be a part of the baseline vegetation studies.
- Jeff Twitchell – Feedback to the Work Group from the subcommittee meeting notes prior to the next Work Group meeting.
- These six items were from Paul Brunner.

1. Species composition

2. Data Gaps
 3. Potential areas
 4. Identify land ownership
 5. Funding discussion
 6. What are the species needs for establishment success?
- Paul Brunner – We keep asking, “What is the future vision of this area?” What are the priority areas for this CMP? We need to define how we determine where and how the river segments of the area are used to achieve the greater holistic view of the entire corridor. The 1600 acres from the TRLIA setback levee should go a long way to achieving several goals for the CMP.
 - John Carlon – Baseline data for the multiple MOU’s for O’Connor Lakes Wildlife Area need to be expanded and used for the other areas. The River Partners spent 16 months working on vegetation and wildlife species this area. Funding for baseline species.
 - Bergman – What data is available is species list.
 - Debra Bishop – Vegetation mapping with the CVFPP Chico riparian project. March of 2011 due out but Feather first phase. GIS is existing habitat area. TRLIA not included on Bear.
 - John Carlon – Tweaking still needed and then ready to go for public release.

Delphi Process

- Earl Nelson – Discussed the history of process. Process used when you are going into unknown informational territory. The Group answers to the issues can help identify or define the questions needed to be asked. This process allows group dynamics to be suppressed so everyone has same opportunities for input.

We will make a list of all responses, removing duplicates, and review with the Work Group. The responses will be classified by the Work Group as:

- Insignificant
- Desirable but unlikely
- Desirable by itself
- Undesirable but likely

Working Group Exercise:

The exercise was introduced and everyone was asked to write their answers to “What do you think will happen within the next 50 years in the Lower Feather River CMP study area?” A compiled list will be given out for the group to look at during the next meeting.

Fifteen Minute Break.

Working Group Exercise – Design issues and possible projects

- **Grassland high-flow channel**
- Earl Nelson – Described a free flow grass channel of the corridor for normal high level flows.
- Gary Hobgood – These grasslands are good Swanson hawk habitat area. There are high maintenance areas to maintain the open grassland.
- John Carlon – I suggest that we let the hydraulic modeling identify the best possible areas for these grasslands to allow for reduced maintenance and facilitating flood flows for the future. The grass habitats are not only vegetation types that may address this issue. Our studies are showing that specific shrub species may also accomplish many of the same goals of grasslands while diversifying the wildlife habitats.
- Ken Cumming – The Oregon Grape (*Mahonia aquifolium*, *Berberidaceae*) is shrub type that has shown great potential as a solution to reduce flow issues. This species should be looked at for future vegetation plantings. It most likely was a past Northern California riparian vegetation type in the Feather River area. Other low profile riparian plants need to be used in the open areas. We need to promote good flow and reduce flow issues through hydraulic planning. A park land ecosystem savanna type should be used for future modeling.
- Gary Hobgood – Beyond riparian areas, there are dry swell areas that can be covered with low resistance to flow vegetation types. The water table and soil types need to be the driver for these species selection.
- John Carlon – Colonization success rates and then successional trends over time need to be addressed for all species selections. The necessary resources to establish and maintain the species at the desired successional stage need to be addressed. Also, the time needed to allow the vegetation to grow into the desired successional stage. After the vegetation is established if it is not achieving the desired affect then we need the freedom to admit an error and remove the vegetation for public safety.

- Steve Fordice – Don't forget the agricultural process can establish and maintain a desired vegetation cover type, while the farmer does the maintenance work for DWR. This is a cost effective method to achieve many of the channel vegetation coverage goals.
- Earl Nelson – Agriculture is very flexible vegetation maintenance tool in some locations. Mostly on the private ownership lands. There is definite potential to expand these operations. These operations must support our future vision of the corridor.
- Debra Bishop & Terri Gaines – Both commented on the cumulative impact of several issues with agriculture and other corridor uses.
- Ken Cumming – The use of livestock and especially goats to help maintain the vegetation cover by mowing is a future alternative for vegetation control that can be cost effective. There already is some use in the Feather River diversion. Rather than one large operation, one or several small operation would be a good idea. Agriculture use in the corridor is a good idea. Continuous trimming and brush removal is costly using State mechanical methods.
- Paul Brunner – If the channel flow is working there is no cost effective reason to make changes. Some vegetation restoration or enhancement projects could be a hindrance, we need to study before we act on a proposal for restoration or removal.
- Earl Nelson – Approval of restoration projects are causing some stage elevation change. The Board will be against this operation. The Board is most concerned with maintaining channel flow to provide public safety needs.
- Paul Brunner – A couple of inches change in stream level is hard to define and even harder to defend as being a major issue in the design flow. The magnitude of subunit management of each river unit is an issue that we will not be able to address. Our grid of the river is too narrow and isolated. The bigger picture needs to be defined and then we can look at that issue on a site by site basis.
- Earl Nelson – The "1957" profile is outdated; the new setbacks have redefined the river corridor profile. We need to address the new freeboard created by the setbacks and determine the impact of river widening. Is the freeboard increased or reduced significantly? The question we need to resolve is how we address a situation when there is a reduction freeboard?
- Kent Zenobia – The Work Group should meet with the local stakeholders and tweak the maintenance process.
- John Carlon – The issues is bigger than just the local stakeholders, we must address the benefits to all Californians. When we address the State funds, public safety, and water supply concerns. Grassland areas are not going to impact freeboard if the river does not want the grassland there.

Investing money to keep grasslands in a river channel that is constantly trying to remove that grassland is not cost effective. Limited funding is better used elsewhere. O'Connor Lakes restoration project was analyzed and the grassland project did increase roughness, though to a lesser extent.

- Paul Brunner – A riparian jungle was programmed into the TRLIA setback and flow analysis. Additional conveyance by widening the channel was not recorded into the 200 year flood levels. What is the additional conveyance with extra freeboard? The worst case scenario is the best choice to protect against flooding. We don't know enough to micro-manage the potential flood flows.
- Jeff Twitchell – There is a bottleneck below Star Bend on the Lower Feather River that needs to be addressed.
- John Carlon – The public safety issue should be defined as reduced risk, not absolutely no risk.
- Jeff Twitchell – The answer lies in the amount of freeboard. By using the maximum historic flow and still providing some freeboard we should address most issues.
- Earl Nelson – The bottlenecks may decrease that freeboard. By reducing the roughness factor in the bottleneck we may increase the freeboard and not need to worry about the vegetation restoration projects.
- Paul Brunner – I think we can all agree we are moving in that direction.
- Kent Zenobia – What is the concern here? The difference of 1/10 of a foot?
- Len Marino – The Board is looking at flood risk reduction. The reduction amount is not as important as the modeling showing the minimum flood stage improving. The Board has expressed they are flexible on the given amount.
- Earl Nelson – How much freeboard is lost by any given project and what is allowed as a minimum appears to be undefined. Perhaps a future analyst of the cost to produce and maintain a minimum standard would be telling. Can the public taxpayer afford to pay the cost for a unit loss of freeboard? On the reverse side, can the public taxpayer afford the cost of lost riparian habitat?
- Work Group discussion continued: – Is grid management the best way to analyze the corridor? The understanding of the corridor management was to look at the entire stretch as the “big” picture. The adaptive management process of defining need, modifying and then adjusting based on observations is lost with this site specific grid concept.
- Kent Zenobia – Adaptive management is agreed upon in the Lower Feather River CMP, but we still need to accomplish flood safety while addressing the other efforts.

- Ken Cumming- Regarding the O'Connor Lakes area low flow project, the fish benefits are needed to cover the low flow during specific times of year only. The rest of the year there is no problem.
- Gary Hobgood – Riparian vegetation may be lost if you are not careful. Vegetation on long term versus short term inundated flood plains react differently. Also, the frequency of the flooding is important criteria too.
- Terri Gaines – The discussion here is the vegetation design issues. This is the fun part of corridor flow design and corridor management. First comes the species (both plant and animal) objectives, then the desired habitats defined and finally the project design is established.
- Earl Nelson – Hydraulic modeling will define where the desired habitats can occur within the corridor. The design will need to mimic the natural process that establish and maintain those desired new habitat areas.
- Terri Gaines – Again, first the species needs should be defined. What species are desired and habitat requirements are needed to maintain those species.
- Jeff Twitchell – Discussion on what we want the CMP to address with potentially more setback levees. Should the Work Group only address guidance on setback levees to resolve channel pinch points? Should we address specific guidance on where the pinch points are located and various methods to reduce the restriction within the channel?
- John Carlon – The CMP should address the existing situation as the hydraulic modeling defines it. Then the discussion should open it up to several potential solutions. The vegetation restoration and maintenance discussion would be included in the topic area.
- Debra Bishop – The CMP should address the transitory storage holding capacity of certain areas. What is the Work Group consideration and what needs to be discussed?
- Scott Rice – This is not an issue downstream maybe this is a concern by DWR?
- Earl Nelson – There has been an issue in Yolo County. What is the concern with potential future setbacks levees and transitory storage holding capacity?
- Terri Gaines – We need to be concerned with what can be resolved with the CMP in the given timeframe. I think certain issues can be mentioned in the conceptual plan for further study but cannot be resolved.
- Earl Nelson – The CMP can address future opportunities for the Lower Feather River and what cannot be addressed in the CMP.
- Terri Gaines – The timing of the hydraulic modeling is an important factor to what can be accomplished with the CMP.

- Earl Nelson – Our current time line is slightly out beyond 1 year.
- Terri Gaines – The Central Valley Flood Prevention Plan (CVFPP) is a high level plan covering a large area. The pieces of this Lower Feather River CMP should include reference to CVFPP as the bigger regional plan. What is the outline for this plan and what is the future adaptability of the Lower Feather River CMP?
- John Carlon – There is extensive reference and site specific information already done for this stretch of river. The TRLIA Setback Levee is already done and the information developed for this project is extensive. Given the existing situation and information available, how do we manage this area now? This Work Group is the best collection of experts on the area and we should be able to move forward from this point towards a management plan.
- Kent Zenobia – The CMP project overlaps with so many of our established missions. Delegation of CMP development should lessen the development workload. The levee setbacks tools alone should be available from internal sources. The local levee maintaining agencies (LMA's) should take the lead on all concepts for levee design. This should be a multiple purposes effort.
- Earl Nelson – The CMP will address multiple goals, including: permitting issues, managing maintenance, restoration projects, etc.
- Debra Bishop – The setback levee are a structural issue. Are we looking at the CMP defining levee guidance for the future?
- Scott Rice – There is geotechnical engineering knowledge of existing levee is available in most urban areas. The rural areas are less known but should be reported on before the EOY. The full existing geotechnical reengineering report will be out next year.
- Earl Nelson – The poorest levees will need more reconditioning work done soon.
- Steve Fordice – The pumps in the TRLIA setback area were a lost economic revenue source for the counties benefit. The transitory storage payments brought income to Yuba County and the levee districts. The internal drainage issue caused a closed basin issue. The cost will be ten times the cost generated from the revenue loss. This change has caused a loss of gravity draining.

Discussion on Silt removal – Nelson Slough

- John Carlon – This issue of sediment build up is not only in the Feather River corridor but also the movement of sediment into the Sutter Bypass. The removal of the silt load is important to the continued river flow issues. The Nelson Slough is only one of perhaps several sites to allow the sediment to be dropped and removed by DWR.

- Earl Nelson – The use of these sediments in seepage berms has been discussed. Routine maintenance removal of these materials is being explored in this area or another area. How does DWR permit this removal is the bigger discussion.
- Ray McDowell – This sounds like a conceptual idea at this time and could be further defined by the hydraulic modeling.
- Discussion followed on the recreation enhancement efforts within the project area including: recreation trails, recreation maintenance efforts, management responsibilities, etc.
- Earl Nelson – The TRLIA gate issues and the maintenance discussion.
- Steve Fordice – The vandalism issues on RD784 has lead to increase management cost and the use of heavy equipment in the area to prevent increase use.
- John Carlon – We will need discussion on the Early Implementation Program (EIP) program, refuge issues and the future funding issues. Future funding of the law enforcement work that needs to be done to do maintenance management within the corridor. Does DWR contract any law enforcement with county sheriffs? The DWR does have a stake in reducing maintenance cost caused by unauthorized use on levees and vandalism. Is there any consideration for these impacts in the long run.
- Earl Nelson – The Department of Fish and Game does much of the law enforcement for the State in the area and these EIP projects are totally different.

Items listed for the next meeting:

- Recreation discussion added to next Meeting.
- Vegetation restorations - Star Bend Pinch Point
- Setback Levees: John Carlon & Earl Nelson discussed the hydraulic modeling and the 1957 profile. The minimum conveyance to stay below flood stage. The lower stage can increase conveyance. Development of this Flood Stage or the Ordinary Water Mark Policy should be presented in the Policy discussion of the CMP. Setback levees should be discussed at the local, regional, and statewide level for environmental interest consensus prior to more in depth studies.

Exercise I

The First Delphi Exercise:

The Work Group was asked to submit a list of:

What do you think will happen within the next 50 years in the Lower Feather River CMP study area?"

Follow- up:

- Email to some of the missing members the Exercise I.
- Meeting ended with some members continuing to complete the Exercise I worksheet.

Next meeting – September 16th is the next scheduled meeting.

DRAFT

Thursday, September 02, 2010 Revised

Purpose Statement:

Lower Feather River Corridor Management Plan (CMP)

The purpose of the Lower Feather River Corridor Management Plan (CMP) is to develop a integrated strategy and long-term vision for managing the river corridor between the Yuba River and the Sutter Bypass in a way that facilitates and promotes public safety with economic sustainability and compatibility in future land uses, flood protection system management, maintenance of flood control facilities, and the restoration and enhancement of ecosystem functions and habitats.

Goals and Objectives

Goal

- 1) Central Valley Flood Protection Board endorsement of a long-term Lower Feather River Corridor Management Plan (CMP) by September 2011.

Objectives:

- a) Establish and facilitate a diverse working group consisting of industry experts and stakeholders, and a policy team to assist in formulating applicable policies. The Working Group will work together through coordination, collaboration and cooperative working relationships with all stakeholders and interested parties to develop a CMP.
- b) Assess the existing corridor and channel habitat, geomorphology (sediment transport and river meander), ownership, and associated land uses to identify how the channel and related flood plain can be better managed. Evaluation will include a three-prong opportunity and constraint analysis addressing flood operations and flood maintenance, ecosystem enhancement, and other multi-objective land use considerations.
- c) Review existing hydraulic and habitat function models and decision support systems to formulate and compare alternative management actions to improve public safety, habitat, and river channel conveyance.
- d) By March 2011 integrate the best management action alternatives into a cohesive set of management actions and policies to guide maintenance, flood protection system improvements, and land use decisions for adoption by the Central Valley Flood Protection Board.

Goal

- 2) Facilitate the necessary permitting for maintenance and new actions within the Study Area without compromising design flow capacity and levee integrity.

Objectives

- a) By December 2011, identify ways to make the environmental clearance and permitting processes more efficient while meeting state and federal safety standards and following state and federal environmental protection procedures.

- b) Take advantage of opportunities to use advance mitigation projects, mitigation banks with deductible credits, and programmatic permits as part of the planned strategy for simplifying permitting for flood maintenance and new actions.

Goal

- 3) Promote ecosystem functions by incorporating flood management system improvements that integrate the recovery and restoration of key physical processes, self-sustaining ecological functions, native habitats, and species. (from Central Valley Flood Protection Plan Interim Progress Summary #1- April 20, 2010)

Objectives

- a) Establish ecosystem restoration projects in conjunction with flood facility maintenance activities and system improvements such that adverse effects to public safety and existing ecosystem functions are fully avoided and minimized, and habitat conditions for listed species are improved and contribute toward species recovery. Increasing habitat quality substantially above previous baseline conditions is expected to result in ecosystem functionality which will allow flood facility maintenance to occur with minimal adverse effects to habitat.
- b) Develop flood facility maintenance Best Management Practices (BMPs) that fulfill flood system operation and maintenance obligations in a manner that preserves public safety while preserving ecosystem vitality and diversity.

Goal

- 4) Promote economic and recreational opportunities within the project area.

Objectives

- a) Inventory opportunities for agricultural activities within the study area. Develop policies to define conditions under which agriculture may be compatible with other study area land uses.
- b) Inventory opportunities for recreational activities within the project area. Develop policies to define conditions under which recreation may be compatible with other study area land uses.